

CLAIMS:

1 1. A display, comprising:

2
3 a transparent substrate;

4
5 fluorescent dye-containing material deposited
6 in a dye layer onto said substrate by ink jet
7 printing; and

8
9 a source of radiation for illuminating said
10 fluorescent dye.

1 2. The display of claim 1, wherein

2
3 said substrate has a front side and a rear
4 side, said substrate being transparent to
5 ultraviolet radiation;

6
7 said fluorescent dye-containing material is
8 provided on the front side of the substrate;
9 and

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11 said source is positioned to illuminate the
rear side of the substrate.

1 3. The display of claim 1, wherein said substrate is
2 transparent to visible radiation and said
3 fluorescent dye-containing material is deposited
4 onto said substrate in a pattern forming a plurality
5 of light emitting regions, at least a portion of
6 said light emitting regions comprising one or more
7 fluorescent dyes selected from a red fluorescent
8 dye, a green fluorescent dye and a blue fluorescent
9 dye, said display further comprising:

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a transparent, conductive layer covering said
light emitting regions;

an organic blue light emitting device covering
said transparent, conductive layer; and

an electrical contact in contact with said
organic blue light emitting device.

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4. The display of claim 3, wherein said light emitting
regions comprise red, green and blue light emitting
regions arranged in a predetermined configuration.

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5. The display of claim 4, wherein said red, green and
blue light emitting regions are arranged in pixels,
each pixel comprising one red light emitting region,
one green light emitting region and one blue light
emitting region, and wherein said electrical contact
contacts said organic blue light emitting device in
each of said red, green and blue light emitting
regions.

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6. The display of claim 4,

wherein each of said red light emitting regions
comprises a red fluorescent dye region and each
of said green light emitting regions comprises
a green fluorescent dye region; and

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wherein said organic blue light emitting device
directly emits blue light in each of the blue
light emitting regions, and said organic blue
light stimulates the fluorescent dye in each of
the red and green light emitting regions.

- 1 7. The display of claim 3, wherein said transparent,
2 conductive layer comprises indium-tin oxide.
- 1 8. The display of claim 1, wherein said fluorescent
2 dye-containing material comprises one or more
3 fluorescent dyes and a matrix material.
- 1 9. The display of claim 8, wherein said dye is present
2 in an amount ranging from about 0.1 to about 6 wt
3 relative to said matrix material.
- 1 10. The display of claim 8, wherein said matrix material
2 is selected from polymethylmethacrylate,
3 polyvinylcarbazole, polybutadiene, polyesters and
4 N,N'-diphenyl-N,N'-bis(3-methylphenyl)-1,1'-
5 biphenyl-4,4'-diamine.
- 1 11. The display of claim 1, wherein said substrate is
2 selected from glass and polyester.
- 1 12. A method for creating a display, comprising the
2 steps of:
3
4 . providing a transparent substrate;
5
6 depositing an ink comprising a fluorescent dye
7 onto said substrate, said depositing occurring
8 by ink jet printing; and
9
10 providing a source of ultraviolet or blue light
11 radiation.
- 1 13. The method of claim 12 wherein

2
3 said substrate has a front side and a rear
4 side, said substrate being transparent to
5 ultraviolet radiation;

6
7 said fluorescent dye is deposited onto the
8 front side of the substrate; and

9
10 said source is positioned to expose the rear
11 side of the substrate to said radiation.

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14 14. The method of claim 12, wherein said substrate is
15 transparent to visible radiation, and wherein said
16 fluorescent dye is deposited onto said substrate in
17 a pattern forming a plurality of light emitting
18 regions, at least a portion of said light emitting
19 regions comprising one or more fluorescent dyes
20 selected from a red fluorescent dye, a green
21 fluorescent dye and a blue fluorescent dye, said
22 method further comprising:

23 forming a transparent, conductive layer
24 covering said light emitting regions;

25 forming an organic blue light emitting device
26 covering said transparent, conductive layer;
27 and

28 forming an electrical contact in contact with
29 said organic blue light emitting device.

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31 15. The method of claim 14, wherein said light emitting
32 regions comprise red, green and blue light emitting
33 regions arranged in a predetermined configuration.

1 16. The method of claim 15, wherein said red, green and
2 blue light emitting regions are arranged in pixels,
3 each pixel comprising one red light emitting region,
4 one green light emitting region and one blue light
5 emitting region, and wherein said electrical contact
6 contacts said organic blue light emitting device in
7 each of said red, green and blue light emitting
8 regions.

1 17. The method of claim 15 wherein each of said red
2 light emitting regions comprises a red fluorescent
3 dye region and each of said green light emitting
4 regions comprises a green fluorescent dye region;
5 and wherein said organic blue light emitting device
6 directly emits blue light in each of the blue light
7 emitting regions, and said organic blue light
8 stimulates the fluorescent dye in each of the red
9 and green light emitting regions.

1 18. The method of claim 12, wherein said ink comprises
2 one or more fluorescent dyes, a matrix material and
3 a liquid carrier medium.

1 19. The method of claim 18, wherein said ink comprises
2 from about 2 to about 7 wt% matrix material.

1 20. The method of claim 18, wherein said dye is present
2 in an amount ranging from about 0.1 to about 6 wt%
3 relative to said matrix material.

1 21. The method of claim 18, wherein the matrix material
2 is selected from polymethylmethacrylate,
3 polyvinylcarbazole, polybutadiene, polyesters and
4 N,N'-diphenyl-N,N'-bis 3-methylphenyl-1,1'-

5 biphenyl-4,4'-diamine.

1 22. The method of claim 12, wherein said substrate is
2 selected from glass and polyester.

1 23. A computer incorporating the display of claim 1.

1 24. A television incorporating the display of claim 1.

1 25. A large area wall, theater or stadium screen
2 incorporating the display of claim 1.

1 26. A billboard or sign incorporating the display of
2 claim 1.

1 27. A vehicle incorporating the display of claim 1.

1 28. A printer incorporating the display of claim 1.

1 29. A telecommunications device incorporating the
2 display of claim 1.

1 30. A telephone incorporating the display of claim 1.